

DEVELOPMENT OF A PEDIATRICS WEB SITE FOR THE UNIVERSITY OF NORTH CAROLINA HEALTH SCIENCES LIBRARY

by
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**A master's project submitted to the faculty
of the School of Information and Library Science
of the University of North Carolina at Chapel Hill
in partial fulfillment of the requirements
for the degree of Master of Science in
Library Science.**

Chapel Hill, North Carolina

April, 2000

Approved by:

Advisor

Acknowledgements

This project was developed during a National Library of Medicine Medical Informatics Fellowship. This project was completed with the aid and collaboration of many people. They include Linda Collins, Barrie Hayes, Carol Jenkins, and Margaret Moore from the UNC Health Sciences Library and Steve Downs, Shannon Hammrick, Gil Liu, Alex Kemper, David Riley, and Judson Van Wyk of the UNC Dept. of Pediatrics.

Dedication

I dedicate this project to the fine teachers, librarians, and family who have contributed mightily to my education. And to Sheridan Bell, you are better than a dream come true.

Background

This Master's Project was part of the UNC Health Sciences Libraries response to a request of the Pediatrics Department and the Floyd Denny Society (whose members are former UNC pediatrics residents and friends of the pediatrics department) for information services for pediatrics residents. The Pediatrics Department and Floyd Denny Society are implementing the goals of the John and Betty Lynch Pediatric Education Fund, established in 1997 to provide state-of-the-art facilities and technologies for the education of pediatric interns and residents in the new University of North Carolina Children's Hospital. The physical plans for the Children's Hospital are summarized in the agreement signed by John Lynch and members of the Pediatrics Department,

The present plans include equipping of a small room on the first floor of the new Children's Hospital with computers for the teaching and self-learning of residents. These computer facilities will be used to give the residents rapid access to the latest evidence-based treatment for various disorders, the pathophysiologic basis of pediatric disorders and related topics. This room will be designated "The London/Lynch Learning Center," and will honor the late Dr. Arthur London and Jack and Betty Lynch.

In addition, a larger seminar and conference room on the first floor will also be equipped with the latest electronic computer facilities for transmitting educational programs to remote sites. This room will be designated the Edward Curnen Seminar Room.

In addition, each of the small pediatric resident workrooms will be wired at the time of building construction to permit access to computer network of the School of Medicine(1).

The Pediatrics Department had formed the Learning Committee to improve resident education in the new Children's Hospital. The needs and wishes of this focus group, outlined in the minutes from their initial meetings, were taken into consideration in designing the pediatrics website.

1. The (computer) system must be accessed from regular hospital workstations as well as computer outlets in Resident workrooms in the new hospital. The connections will be by Ethernet. The Pediatric teaching materials must be available by Internet so those Residents on Assignment at Wake Medical or Greensboro (Moses Cone), or who are at home, can access the system. It was pointed out that residents often have more free time in these other locations than on a busy inpatient service at UNC Hospital.

2. Information must be accessible very rapidly. Residents will not have time for long searches. They should be able to tap into a menu that gives them ready access to Pediatric textbooks, specialized learning procedures, specialized pediatric resources such as the Red Book of the American Academy of Pediatrics, CD ROM materials offered by the Academy of Pediatrics, and others to be determined. The critical point is that there will not be long periods of time available for lengthy searches.
3. To keep the service updated, it may be necessary to employ a librarian, at least on a part time basis. Such an individual might be the individual who will also maintain the server.
4. A great deal of enthusiasm was expressed for Residents inserting in the network the products of their own research or handling of certain patients. In other words, if the resident treated a rare disease, this experience should be accessible through the pediatric network when similar patients are seen. Comment: Although difficult to implement, this feature is very attractive because it will involve the Residents themselves in their own learning.
5. One of the Residents hoped that we could employ someone to do searches for them. Dr. Mayo pointed out that this would not be available when they get into practice. She thought it was important that we teach our Residents how to do their own searches. (2)

The next report was from a meeting of the Learning Committee with staff from the Health Sciences Library and the Medical School Office of Information Services (OIS);

(As a result of discussion with library staff, both the library staff and the Learning Committee felt that the best way to provide pediatric learning resources would be as a subset of the UNCLE menu). The development of the learning resources can begin immediately before the extensive computer resources that will be available in the new Children's Hospital becomes available. I asked Margaret Moore (Head of User Services at the Health Sciences Library) to proceed with her previous offer to have someone in the Health Sciences Library assist in setting up this pediatric learning resource, and possibly helping us in managing it.

Discussion was held about having a training module as an integral part of the Pediatric menu that would instruct the user on how to expeditiously access material. Such modules would not be specifically oriented toward any disease but would provide guidance on how to access the desired information.

Time Table:

A sense of urgency in getting part of our program in place is the upcoming meeting of the Floyd Denny Society in October (1999). (This is a triennial meeting of former residents and friends of the department). We hope to enlist their continuing support by demonstrating how access to the pediatric learning resource in their local communities will help them in their practices. We hope that by that time we will be able to have demonstrations of searches at the Saturday morning workshops, and have some computers set up for the attendees at this meeting to learn how they can access our Pediatric Learning Resource by Internet.(3)

HSL was attracted to this project because it met their goals of

1. being a learning / teaching library
2. providing customized services for different user groups
3. developing stronger clinical relationships and services.

The UNC Health Sciences Library responded to the Learning Committee with a proposal and list of issues that would have to be addressed for its implementation. They were outlined as follows;

Services discussed to date fall into four main categories:

1. Web-based presentation of electronic resources
2. Clinical services
3. Case presentation database
4. Education and consultation

Status/Issues/Questions regarding four service areas:

1. Web-based presentation of electronic resources

This could be accomplished through the creation of a customized UNCLE "Special Collection" with resources gathered and targeted specifically for pediatric clinicians, residents and faculty. Questions arise regarding access and licensing. This could be easily accomplished on UNCLE for UNC affiliates, however, if access beyond this category of people is desired, there are possible problems with UNCLE authentication. There may be complementary roles for UNCLE and AHEC Digital Library Project to play in providing access to different pediatric audiences.

Status: Potential resources are being reviewed. Complementary roles for UNCLE and AHEC Digital Library Project are being explored. A Library team to work on web presentation has been assembled. Further delineation of target audience and their resource needs is necessary prior to prototype development.

Questions:

1. Audience

Several potential audiences have been proposed:

- UNC-CH Pediatric residents
- UNC-CH Pediatrics faculty
- UNC Hospital Pediatrics house staff
- Pediatric clinicians in practice

- Floyd Denny Society members (former residents and friends of UNC-CH Pediatrics)

Given probable licensing restrictions on HSL subscribed resources, are all audiences of equal priority?

If not, then which groups have highest priority?

If so, how to handle resources access for non-UNCE-CH affiliates?

2. Resource Needs:

What tasks is this web presentation of resources intended to support?

What types of resources are desired? For example:

- medical literature searching (MEDLINE),
- clinical reference (pediatrics texts)
- School of Medicine curriculum links (SOM electronic syllabus)
- certification software (Harriet Lane Certification Program)

3. Required characteristics:

- Quick and easy to use
- Internet accessible from clinical workstations, resident workrooms, off-campus clinic, home
- Currency (regular maintenance)

4. Relationship to existing Pediatrics web pages

- Pediatrics department Web site (<http://pediatircs.mend.unc.edu/>)
- Recommendations of pediatric clinician groups or individuals to work with library team to further refine resource/information needs(4).

This Master's Project is an attempt to implement the first of these proposed services: a web-based presentation of electronic resources. Since I already had experience in web development for the Health Sciences Library in a previous Field Experience, it was suggested to me that this project would be a suitable Masters Project, combining my interest in web development with the needs of the Health Sciences Library. I agreed and the result, Pediatrics Special Collection, can be seen at <http://www.uncle.unc.edu/uncle/collections/pediatrics/pediatrics.htm>. A copy of the resources included in the site is included in Appendix A. It is hoped that the audience for this website will be expanded in time to include faculty and practicing pediatricians in North

Carolina. However, to simplify licensing issues for some resources, it was decided to initially design this site exclusively for residents. Also, it was intended that this resource would be used immediately, before the new Children's Hospital was completed.

In addition to creating the web site, this project included a search of similar sites and possible resources to include in the site. It also included a study of the information needs and information seeking behaviors of pediatric residents. An evaluation plan was developed to measure the impact of the site. This included a survey to determine the frequency of information resource use before and after the site was implemented. Since the evaluation plan was a before/after design, the survey was developed and administered before the site was launched. It is expected that another SILS student with an interest in medical librarianship will administer the follow-up survey next fall.

Methodology

Study of Similar Sites

This project began with a search for similar sites on the web. This was done for two reasons: to avoid "reinventing the wheel" and to see what others had done. This provided potential models and also revealed information sources that we would want to consider including in the site.

The sites that seemed most comprehensive and authoritative included HealthWeb- Pediatrics (www.galter.nwu.edu/hw/ped/), PEDINFO (www.pedinfo.org), and Virtual Pediatrics Hospital (www.vh.org).

Determining the Information Seeking Behavior, Preferences, and Needs of Pediatrics Residents

The project also started with a search of the literature on the information needs of pediatric residents. This was followed by observation of the various pediatrics rounds to learn what types of information needs came up. One round of each of the following types was observed: the two

teams of general pediatrics rounds, grand rounds, pediatric intensive care rounds, neonatal intensive care rounds, and nursery rounds. Each round, lasting from 45 to 90 minutes, included 6 to 25 residents and 2 to 4 attending physicians. Informal interviews of three residents and three attending pediatricians were also conducted. A copy of the consent form used for the informal interviews with residents is shown in Appendix B. The List of Questions that follows was developed as a starting point for the interviews.

List of Questions

This is a general framework for interviews. These questions represent areas of inquiry and will be used to guide conversations rather than to rigidly structure them.

During rounds

- Do you have any questions about this case that you would like to explore further?

Time resources

- What is a typical schedule for you?
- If you have time to pursue a question, what would likely times and locations be?
- What is the range in amount of time you will spend to find information to answer a clinical question?
- During what times and for how long do you typically study?

Information Resources

- What information resources are available at the various work locations and how would you rate them in terms of quality and convenience?
- What are your favorite information sources?
- What types of information do you have the most trouble finding (quickly)?
- Do you use any of the resources in UNCLE?
- Are you familiar with the pediatric resources in UNCLE and the clinical quick links special collection?
- What types of resources and services would you like to see included in the proposed site?
- What information resources do you find most useful or use most often?

Sometimes I would present the pediatrician with a list of resources and ask them to give their opinion of the usefulness of each one. In addition, I discussed with a resident her frustrations in

searching for pediatrics information and observed her searching for information about a particular disease. This was illuminating as I could see that her choice of resources (MEDLINE) and qualifying search phrases contributed to the poor results. This prompted us to include a page of search tips for pediatrics for MEDLINE in the website, entitled "MEDLINE Pediatrics Searching Tips," which is included in Appendix A.

The evaluation survey also provided data about the information seeking behavior of the residents. Information gathered included what information sources they used, the percentage of case for which they sought published information, how long they spent on the searches, and how many of them were successful. This provided data useful for the design of the site as well as a basis to evaluate the impact of the site on their information seeking behavior.

Survey

Evaluation Plan for the site

As part of this project, an evaluation plan was developed to measure the effectiveness of the site. A before/after survey design was chosen. The measure used was the percentage of recently admitted pediatric patients for whom a search of published information was done. It is hoped that by making a useful and convenient website available, this percentage will increase when the survey is administered again in Fall, 2000. The unit of analysis is a patient admittance. A copy of the survey is shown in Appendix C.

The survey was conducted from about September 3, 1999 to about November 25, 1999. The survey was distributed to all pediatric residents who admitted patients during the period of study and measures the percentage of cases for whom they or other pediatric residents or medical students searched for published information. The search for information for the patient must have been done within 24 hours of admission.

The rate of admissions at the three sites varies substantially between summer and winter. UNC averages about 20 admissions per day. Moses Cone averages about 6 per day in the winter, less in the summer. Wake Medical averages 10 per day fairly evenly through the year.

At a given time, there are, 25 residents admitting at UNC, 6 at Moses Cone, and 8 at Wake Medical. This is out of a total population of 45 pediatric residents and 25 Internal Medicine/Pediatrics residents. Half of the Internal Medicine/Pediatric residents are on medicine rotations, so the total number of residents on pediatrics rotations at a time is about 55 residents. There are also about 5 medical students at a time on pediatrics rotations.

Results of the Survey

The results are summarized in Tables 1 and 2. Data for 248 cases were collected from September 1999 to November 1999. Based on the approximate admission rates listed above, the response rates for the survey were 15% for Moses Cone, 5% for UNC, 11% for Wake Medical, and 8% overall. 77 of the cases were from Moses Cone, 82 from UNC and 89 at Wake Medical. A 95% confidence level was used to calculate the confidence intervals reported. The percentage of cases for which an information search was done averaged $24\% \pm 1\%$ for all locations and ranged from $16\% \pm 2\%$ at Moses Cone to $29\% \pm 2\%$ at Wake Medical. The average search time for all locations was 19 minutes. The average search time at UNC was only 13 minutes. At Moses Cone it was 22 minutes and at Wake Medical it was 23. As suggested in the minutes of the Learning Committee, residents at UNC may often have less time to conduct searches due to the demands of the UNC hospital. Also, there are many sub-specialists at UNC, who they might refer to, rather than print sources. Differences in caseloads, information resources (both published and other doctors to consult), types of searches done, and behaviors of individual residents assigned to each site might contribute to this difference. The rate of success for all searches was $68\% \pm 2\%$, with the highest at Moses Cone ($92\% \pm 5\%$) and the lowest at Wake

Medical (58% \pm 2%). There was no correlation (correlation coefficient = 0.17) between the time spent searching and the rate of success.

For all the searched cases, 76% \pm 2% of them included a print textbook, 15% \pm 1% a print journal, 7% \pm 1% a website, 29% \pm 1% an online database such as MEDLINE, 2% \pm 1% an online textbook, 7% \pm 1% an online journal article and 8% \pm 1% some other source. On average, 1.4 different types of resources were consulted in a search. Multiple sources from each category were often mentioned, but this was not tabulated, due to inconsistency in the detail of the survey reports.

It is expected that the availability of standard pediatric texts on the pediatrics website will result in more searches in the follow-up study including a search of online texts.

Table 1 Survey Results

Location:	Number of cases	Number of cases for which a search was done	Percentage of cases for which a search was done	Search time (minutes)	Number of cases where desired information was found	Percentage of searched cases where desired information was found
Moses Cone	77	12	16% \pm 2%	22	11	92% \pm 5%
UNC	82	21	26% \pm 2%	13	14	67% \pm 3%
Wake Medical	89	26	29% \pm 2%	23	15	58% \pm 3%
All locations	248	59	24% \pm 1%	19	40	68% \pm 2%

Table 2 Survey Results - Sources Consulted for Information Searches**Print-based Searches**

Location:	Number of searches using a print textbook	Percentage of searches using a print textbook	Number of searches using a print journal	Percentage of searches using a print journal	Number of searches using other published sources	Percentage of searches using other published sources
Moses Cone	11	92% \pm 5%	2	17% \pm 2%	0	0% \pm 25%
UNC	18	86% \pm 4%	2	10% \pm 1%	2	10% \pm 1%
Wake Medical	16	62% \pm 3%	5	19% \pm 2%	3	12% \pm 1%
All locations	45	76% \pm 2%	9	15% \pm 1%	5	8% \pm 1%

Online Searches

Location:	Number of searches using a website	Percentage of searches using a website	Number of searches using an online index	Percentage of searches using an online index	Number of searches using an online textbook	Percentage of searches using an online textbook
Moses Cone	1	8% \pm 2%	3	25% \pm 3%	0	0% \pm 25%
UNC	0	0% \pm 14%	5	24% \pm 2%	1	5% \pm 1%
Wake Medical	3	12% \pm 1%	9	35% \pm 2%	0	0% \pm 12%
All locations	4	7% \pm 1%	17	29% \pm 1%	1	2% \pm 1%

Location:	Number of searches using an online journal article	Percentage of searches using an online journal article
Moses Cone	1	8% \pm 2%
UNC	0	0% \pm 14%
Wake Medical	3	12% \pm 1%
All locations	4	7% \pm 1%

Design

Design Goals for the Site and Solutions

There were numerous requirements and goals for the site, both for its design and content. The site and resources would be required at the three hospitals and preferably at the residents' homes, as well. Residents are notoriously harried and need to have very fast access to information, with minimal searching time. Also, the site should be as simple, easy to use, and uncluttered as possible. It seemed desirable to make the site one that the residents would use as their "home page" in the residents' workroom. The resources provided should be authoritative, current, and cover the wide range of interests of pediatric residents.

Since no library staff time had been committed to maintaining this special collection and with the vagaries of state budgets, it seemed prudent to minimize the maintenance requirements for the site. Some latitude was given to the design of the site by the library, but it needed to be compatible with the rest of the library's pages and design.

Creation of the Site

The design approach was to "grow" the site with rapid prototyping, rather than to plan it out in great detail and then execute it. This allowed for testing of the programming in stages and for feedback from the residents and library staff as the site was being developed. They could view the site in the web browser at all stages development.

Design - Format

Other decisions that were made early on were to have this site on the web and to make the resources predominantly web based. Some of the resources require logon using a Personal ID (PID) from off campus computers. All students, residents, and staff at UNC are eligible for a PID. A proxy server verifies UNC affiliation using the PID and then sends that verification to the host site, which then allows access to the user. Currently the only non web-based resources

included in the site are some CD based resources located on the UNC Medical School server. These resources are only available on campus.

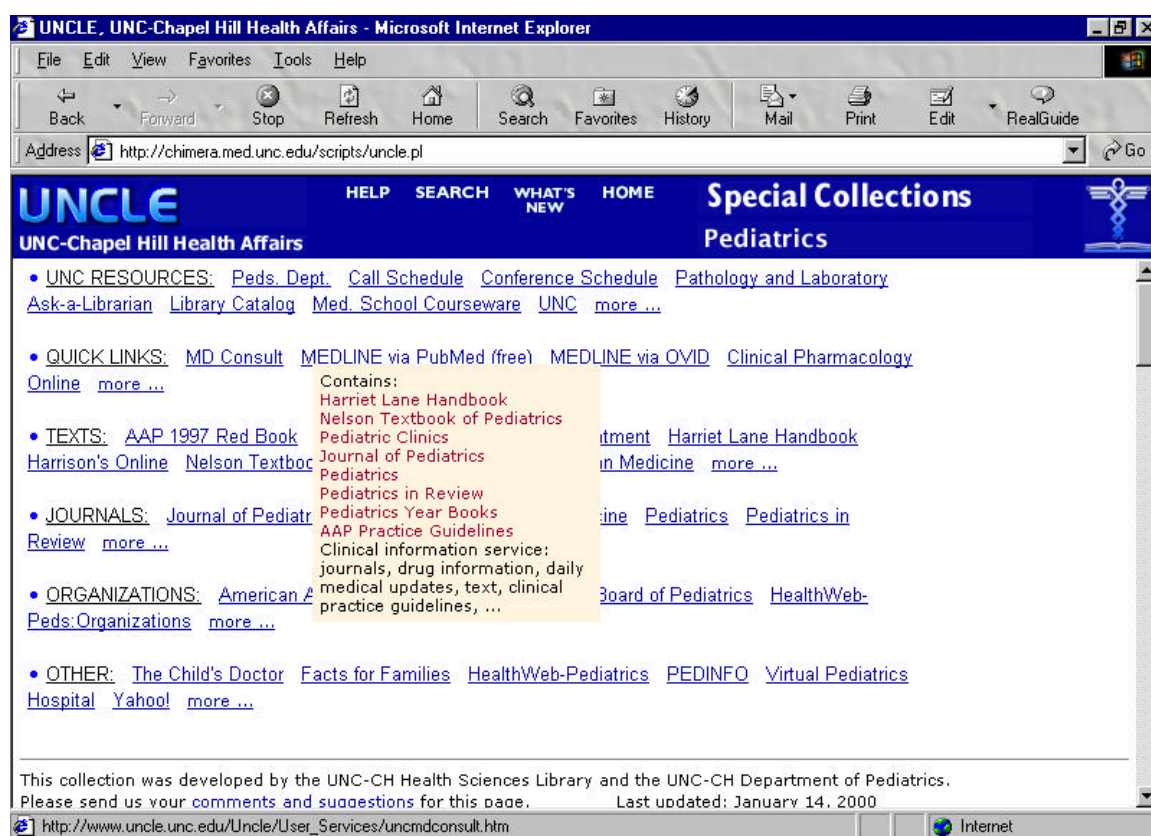
It was assumed that a 600 x 800 pixel screen using Microsoft Internet Explorer or Netscape Navigator browsers would be standard, but we also wanted the site to work for 480 x 600 screens as well. For speed and ease of use, we wanted to create a single screen (no scrolling required) that would contain the most commonly used links. For the purposes of this paper, this screen will be referred to as the "Highlights" section of the web page. To avoid the loading time of multiple pages for a search, it was decided to include the comprehensive listing of resources in the same web page, below the Highlights section. The resources were arranged by resource type, since other collections in UNCLE were already organized in that way and the format seemed to work well for other comprehensive pediatrics sites. We used this format to organize both the Highlights section and the comprehensive listing of resources. There is a link from each section of the Highlights to the comprehensive list of resources of that type. The categories chosen for the site are "UNC Resources," "Quick Links," "Texts," "Journals," "Organizations," and "Other."

Continuing previous development work on UNCLE, Cascading Style Sheets were used for the layout of this site. Both M.S. Internet Explorer and Netscape Navigator support Cascading Style Sheets. A style sheet defines the format of one or more pages. This allows the format of a page to be specified separately from its content. Furthermore, a single change to the style sheet can change the format of each page that links to it. This makes refinement and maintenance of the site much simpler and faster. It facilitates uniformity in the format of the site. It also allows much more detailed specification of the layout of the site. Style sheets allow artful text to be created without the use of graphic files for the text. This reduces the file size of the page immensely and also allows librarians to quickly change the content without having to use graphical software or wait for someone with those skills to make those changes. Additionally,

text only browsers can display this content, which they would be unable to do with graphical files.

We wanted to create a clean, simple page but also needed to include descriptions of certain resources. This was accomplished by a Java Script which displays a description box when the user "mouses over" certain resources (see Figure 1 A description box for MD Consult). Unlike most other mouseovers, this script uses Cascading Style Sheets rather than graphical files to create the descriptions. This allows a librarian to modify the content quickly and easily. Also, additional descriptions for other resources can be added fairly easily by copying the appropriate code. The Java Script was based on a script by Randy Bennett (rbennett@thezone.net) available at no cost from The JavaScript Source!! (<http://javascript.internet.com>).

Figure 1 A description box for MD Consult



Neither the library staff nor the pediatrics department was completely satisfied with the header for the site. It is the standard UNCLE header with the words "Special Collections" and "Pediatrics" added. The words "UNCLE" and "Home" provides links to the main UNCLE page, "What's New" provides a link to news about UNCLE, "Help"-to help pages and contact information about UNCLE, and "Search- to a form to search UNCLE or the web. Members of the Pediatrics Department wanted to have the Pediatrics Department name on the header. Since the UNCLE header is already in the process of being redesigned, it seemed best to use the standard header and consider all the suggestions for its improvement in the redesign of the header. A short statement of authority and a link for comments were included below the Highlights section.

Design - Content

Resource Selection

The decision whether to include a resource in the Highlight section and/or comprehensive list was made by both library staff and the pediatricians. Typically, we would present a list of possible resources to a resident and ask them which they felt would be useful. For those resources that the resident was unfamiliar with, we demonstrated and described the resource or asked them look at them on their own, more thoroughly. The pediatricians were most helpful in giving guidance about which resources would be most frequently used and therefore, should be included in the Highlights section. Part way through the project, we learned that one of the residents, David Riley, had created his own "unofficial" web site for the pediatric residents. We consulted with him and added some of the resources he had listed that we were unaware of, such as the Conference and Call Schedules and the Neonatology Network (www.neonatology-net.com).

Another feature included in the site was a page of searching hints for pediatric resources. Our observations of residents searching and conversations with them revealed that often they could find plenty of information about a subject in MEDLINE, but when they tried to narrow down the

information to pediatrics, they were often left empty handed. This was due in part to crossing their original search phrase with the term "pediatrics," rather than using the age limiting fields in the OVID MEDLINE interface. We decided to gather this type of information into a page of "MEDLINE Pediatrics Searching Tips," written by HSL librarian, Linda Collins. In time, we hope that this page will be expanded to include more tips and cover other resources.

Conclusion

Future development of the site

The Health Sciences Library will need to periodically maintain the site, adding and removing resources as their subscription change and resources change. A follow up survey is planned for Fall 2000, to be administered by another SILS graduate student with an interest in medical librarianship. In addition, it would be useful to determine how frequently the different resources in the site are being used, what resources are frequently desired but not available in the site, and to collect evaluations by the residents of the site. The evaluations could be gathered by interview, survey, or focus group. This information could be used both as an evaluation of the site and useful information for improving the site. Since the World Wide Web is so new, it is expected that more resources will become available and added to the site. This will require either searching for these sites by a librarian or otherwise being informed of their existence.

Notes

1. From the Agreement signed 2/12/1998 by John F. Lynch, Jr., MD, Floyd W. Denny, Jr., MD, Wallace D. Brown, MD, Harvey J. Hamrick, MD.
2. Judson J. Van Wyk, MD. Report on meeting of focus group to discuss resident education in the new children's hospital. March 23, 1999.
3. Judson J. Van Wyk, MD. Report on joint meeting of learning committee with members of OIS and library staff to discuss resident education in the new children's hospital, April 21, 1999.
4. Margaret Moore. Proposal for library services for pediatric residents and faculty. June 23, 1999.

Appendix A Pediatrics Special Collection

- ☐ **UNC RESOURCES:** [Peds. Dept.](#) [Call Schedule](#) [Conference Schedule](#) [Pathology and Laboratory](#) [Ask-a-Librarian](#) [Library Catalog](#) [Med. School Courseware](#) [UNC](#) [more ...](#)
- ☐ **QUICK LINKS:** [MD Consult](#) [MEDLINE via PubMed \(NLM; free access\)](#) [MEDLINE via OVID](#) [Clinical Pharmacology Online](#) [Micromedex](#) [more ...](#)
- ☐ **TEXTS:** [AAP 1997 Red Book](#) [Current Pediatric Diagnosis & Treatment](#) [Harriet Lane Handbook](#) [Harrison's Online](#) [Nelson Textbook of Pediatrics](#) [Scientific American Medicine](#) [more ...](#)
- ☐ **JOURNALS:** [Journal of Pediatrics](#) [New England Journal of Medicine](#) [Pediatrics in Review](#) [more ...](#)
- ☐ **ORGANIZATIONS:** [American Academy of Pediatrics](#) [American Board of Pediatrics](#) [HealthWeb-Peds:Organizations](#) [more ...](#)
- ☐ **OTHER:** [The Child's Doctor](#) [Facts for Families](#) [HealthWeb-Pediatrics](#) [PEDINFO](#) [Virtual Pediatrics Hospital](#) [Yahoo!](#) [more ...](#)

This resource collection was developed by the UNC-CH Health Sciences Library and the UNC-CH Department of Pediatrics.

Please send us your [comments and suggestions](#) for this page.
14, 2000

Last updated: February

UNCLE (Health Electronic Resources) is jointly developed and managed by the Health Sciences Library and the Office of Information Systems in the School of Medicine. Funding for UNCLE is provided in part by the UNC-CH Division of Health Affairs.

UNC CONTACTS AND RESOURCES

[Ask-a-Librarian](#)
[Clinical Quick Reference](#)
[Health Sciences Library](#)
[Interlibrary Loan/Document Delivery](#)
[Library Catalog](#)
[Med. School](#)
[Med. School Courseware](#)
[Pathology and Laboratory](#)
[Peds. Call Schedule](#)
[Peds. Conference Schedule](#)
[Peds. Dept.](#)
[Peds. E-mail](#)
[Pediatrics Housestaff Homepage](#)
[UNC](#)

QUICK LINKS

[Clinical Pharmacology Online](#)
[Diagnostic Procedures Handbook](#)
[MD Consult \(Complete contents\)](#)
[MEDLINE via PubMed \(NLM; free access\)](#)
[MEDLINE via OVID](#)
[MEDLINE Search Tips for Pediatricians](#)
[Micromedex Healthcare Series \(Complete contents\)](#)
[National Guideline Clearinghouse \(NGC\)](#)
[OVID EBM Reviews - Best Evidence](#)
[OVID EBM Reviews - Cochrane Database of Systematic Reviews \(CDSR\)](#)
[STAT!-Ref Online \(Complete contents\)](#)

TEXTS

[AAP 1997 Red Book \(in MD Consult\)](#)
[Current Pediatric Diagnosis & Treatment in STAT!-Ref Online](#)
[Guide to Clinical Preventive Services](#)
[Harriet Lane Handbook \(in MD Consult\)](#)
[Harrison's Online](#)
[Nelson Textbook of Pediatrics \(in MD Consult\)](#)
[Scientific American Medicine \(SAM\) Online](#)

JOURNALS

[Archives of Disease in Childhood](#)
[European Journal of Pediatrics](#)
[International Journal of Pediatric Otorhinolaryngology](#)
[Journal of Adolescent Health](#)
[Journal of Pediatric Psychology](#)
[Journal of Pediatrics \(in MD Consult\)](#)
[Journal of Tropical Pediatrics](#)
[New England Journal of Medicine \(1993- \) \(via OVID Core Biomedical Collection at UNC\)](#)
[New England Journal of Medicine \(via publisher site\)](#)
[Pediatric Cardiology](#)
[Pediatric Nephrology](#)
[Pediatric Neurology](#)
[Pediatric Radiology](#)
[Pediatrics \(via Internet\)](#)
[Pediatrics \(1993- \) \(via OVID Core Biomedical Collection at UNC\)](#)
[Pediatrics in Review](#)

ORGANIZATIONS

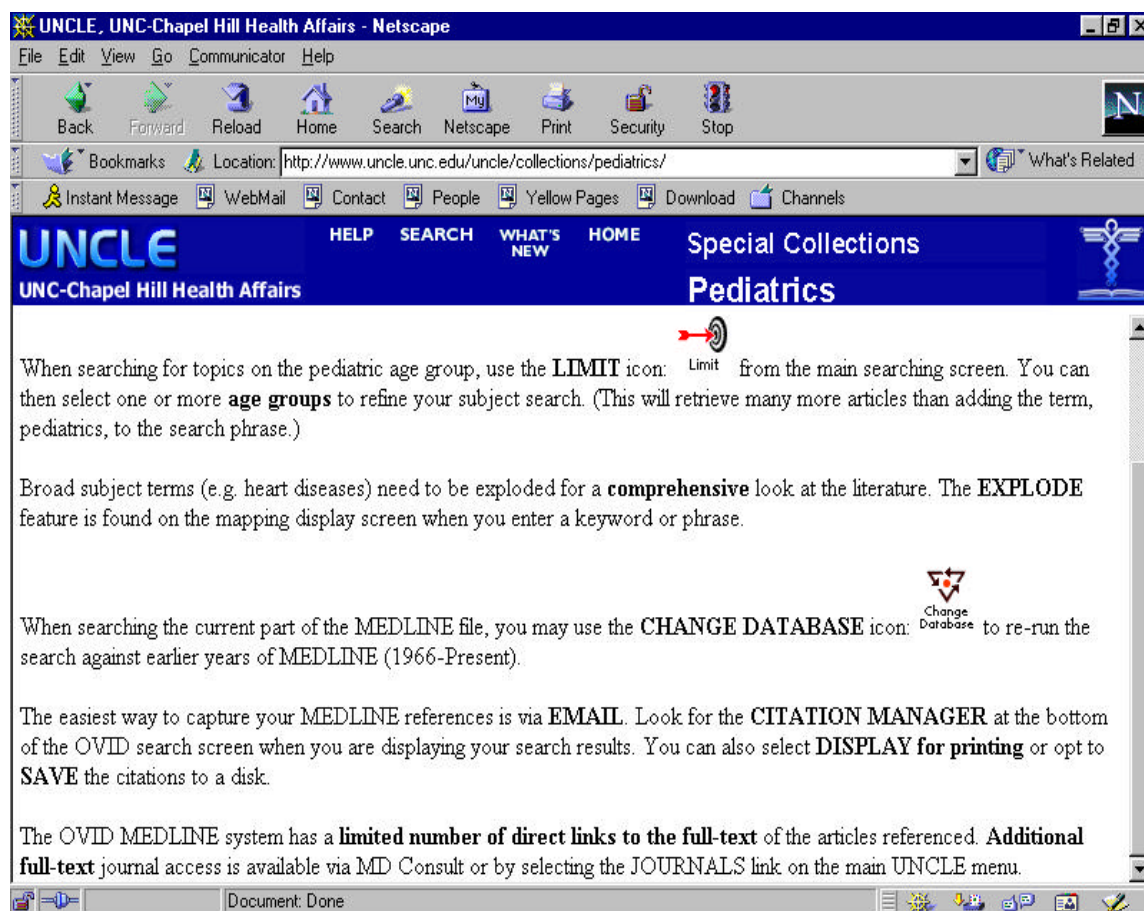
[American Academy of Child & Adolescent Psychiatry](#)
[American Academy of Pediatrics](#)
[American Association for Pediatric Ophthalmology and Strabismus](#)
[American Board of Pediatrics](#)
[HealthWeb - Organizations](#)

OTHER

[AAP-The Best of the Pediatric Internet](#)

[Center for Disease Control Home Page](#)
[The Child's Doctor](#)
[Clinical Cancer Information from PDQ](#)
[Dermatology Images Database](#)
[Facts for Families](#)
[Genome Data Base](#)
[GeneralPediatrics.com](#)
[HealthWeb-Pediatrics](#)
[Human Linkage](#)
[Med Files:Pediatrics](#)
[Medical Matrix - Pediatrics](#)
[Neonatology Network](#)
[Online Mendelian Inheritance in Man](#)
[Pediatric Points of Interest](#)
[PEDINFO: an Index of the Pediatric Internet](#)
[Peds Critical Care Info](#)
[PedsCCM File Cabinet](#)
[PedsCCM: Pediatric Critical Care Nursing](#)
[Poison Control Information](#)
[Society for Adolescent Medicine Position Papers](#)
[Virtual Pediatrics Hospital](#)
[Yahoo!](#)
[Youth Indicators 1996 - Trends in the Well-Being of American Youth](#)

MEDLINE Pediatrics Searching Tips



UNCLE, UNC-Chapel Hill Health Affairs - Netscape


File Edit View Go Communicator Help

Back Forward Reload Home Search Netscape Print Security Stop


Bookmarks Location: <http://www.uncle.unc.edu/uncle/collections/pediatrics/> What's Related

Instant Message WebMail Contact People Yellow Pages Download Channels

UNCLE HELP SEARCH WHAT'S NEW HOME Special Collections
 UNC-Chapel Hill Health Affairs Pediatrics

When searching for topics on the pediatric age group, use the **LIMIT** icon:  from the main searching screen. You can then select one or more **age groups** to refine your subject search. (This will retrieve many more articles than adding the term, pediatrics, to the search phrase.)

Broad subject terms (e.g. heart diseases) need to be exploded for a **comprehensive** look at the literature. The **EXPLODE** feature is found on the mapping display screen when you enter a keyword or phrase.

When searching the current part of the MEDLINE file, you may use the **CHANGE DATABASE** icon:  to re-run the search against earlier years of MEDLINE (1966-Present).

The easiest way to capture your MEDLINE references is via **EMAIL**. Look for the **CITATION MANAGER** at the bottom of the OVID search screen when you are displaying your search results. You can also select **DISPLAY for printing** or opt to **SAVE** the citations to a disk.

The OVID MEDLINE system has a **limited number of direct links to the full-text** of the articles referenced. **Additional full-text** journal access is available via MD Consult or by selecting the **JOURNALS** link on the main UNCLE menu.

Document: Done

Appendix B Interview Consent Form

Consent Form

Introduction to the Study

- You are invited to participate in a study of the information needs of pediatric residents at the University of North Carolina, Chapel Hill.
- Anne Lawrence, a graduate student enrolled at the School of Information and Library Science at the University of North Carolina at Chapel Hill, is conducting this study under the supervision of Dr. Claudia Gollop, also of the School of Information and Library Science.

Purpose

- The purpose of this study is to learn what types of information pediatric residents need, what information resources they currently use, and what time and technological resources they have for filling their information needs.
- The Health Sciences Library wishes to use this information to develop a special collection for pediatric residents in UNCLE to help fill their information needs.

What will happen during this study

You may be observed during rounds and may be asked if you have any questions pertaining to the cases or related material. You may also be asked questions after rounds about what information resources you use and prefer and what time and computing resources are available to you to answer your clinical questions and for general study.

If you have any questions or concerns about being in this study, you should call Anne Lawrence at (919) 933-1686 (home), (919) 966-6870 (Health Sciences Library), or e-mail lawra@ils.unc.edu. You may also call her faculty advisor, Dr. Claudia Gollop at (919) 962-8362.

Your privacy is important

- We will make every effort to protect your privacy.
- We will not use your name in any of the information we get from this study or in any of the research reports.
- Any information we get in the study will be recorded with a code number so that Anne Lawrence will know who you are.
- When the study is finished the key that shows which code number goes with your name will be destroyed.
- Since we will be making efforts to protect your privacy, we ask you to agree that we may use any information we get from this research study in any way we think is best for publication.

Risks and discomforts

I do not know of any personal risk or discomfort you will have from participating in this study.

Your rights

- You decide on your own whether or not you want to be in this study.
- If you decide to be in the study, you will have the right to stop being in the study at any time.

Institutional Review Board Approval

- The Academic Affairs Institutional Review Board (AA-IRB) of the University of North Carolina at Chapel Hill has approved this study.
- If you have any concerns about your rights in this study you may contact the Chair of the AA-IRB, David A. Eckerman, at CB# 4100, 300 Bynum Hall, UNC-CH, Chapel Hill, NC 27599-4100, (919) 962-7761 email: aa-irb@unc.edu.

Summary

- I understand this is a research study to learn what the information needs of pediatric residents at the University of North Carolina at Chapel Hill.
- If I agree to be in the study, several things will happen:
 1. I will be observed during rounds
 2. I may be asked questions during rounds or after rounds.

I have had the chance to ask any questions I have about this study, and they have been answered for me.

I have read the information in this consent form, and I agree to be in the study. There are two copies of this form. I will keep one copy and return the other to the investigator.

(Signature of Participant)

(DATE)

Appendix C Information Searching Survey

Dear Pediatric Resident,

I am conducting a study of pediatric residents' information searching habits. The objective of this research project is to improve their access to information. Enclosed is a survey that includes questions about any searches for information you may have done related to the care of recently admitted patients. I hope you will take a few minutes to complete this survey and return it to the envelope in the chief residents' office. Your participation is voluntary. There is no penalty if you choose not to participate. Please do not write your name on the questionnaire. I do not need to know who you are. All survey responses are confidential. Regardless of whether you choose to participate, you may have a summary of my findings. To receive a summary, send your request to Anne Lawrence, UNC-CH Health Sciences Library, CB#7585, The University of North Carolina, Chapel Hill, NC 27599-7585 or by e-mail to Anne Lawrence at lawra@ils.unc.edu.

Thank you for your participation.

Sincerely,

Anne S. Lawrence
Graduate Student
School of Information and Library Science

If you have any questions or concerns about being in this study, please contact me at (919) 933-1686 (home), (919) 966-6870 (Health Sciences Library), or e-mail lawra@ils.unc.edu or my faculty advisor, Dr. Claudia Gollop at (919) 962-8362 or the UNC-CH Academic Affairs Institutional Review Board at David A. Eckerman, Chair
UNC-CH Academic Affairs Institutional Review Board
CB# 4100, 201 Bynum Hall
The University of North Carolina at Chapel Hill
Chapel Hill, North Carolina 27599-4100
(919) 962-7761
email: aa-irb@unc.edu

Information Searching Survey

Date: Fall 1999

How many patients did you admit in the previous 24 hours? _____

For how many of these patients did you or another resident or medical student search for information related to their care in text or online resources? _____

For each of the patients that an information search was done, please complete the following:

	Patient 1	Patient 2	Patient 3	Patient 4	Patient 5	Patient 6
How many of each of the following types of resources did you consult?						
• Print textbook						
• Print journal article						
• Website						
• Index (such as MEDLINE)						
• Online textbook						
• Online journal article						
• Other						
Were you able to find the information you sought from one of these sources?						
Did you find anything else of use during your search?						
How much time did spend on this search?						

(optional, but helpful to us) What is the title of the resource that had the information you sought?

Patient 1: _____

Patient 2: _____

Patient 3: _____

Patient 4: _____

Patient 5: _____

Patient 6: _____

Comments:

Thank you